Docket: MICRODOSE 99.01 CON

Amendment I with RCE

AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 3-5, 7, 8, 14, 22, 23, 25, 28-30, 34, 48, 49, 52-57, 59, 60, 63,

64, 67 and 69-71, as shown below.

This listing of claims will replace all prior versions and listings of claims in the

Application:

Claim 1 (currently amended): A method for depositing particles onto a dielectric

substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol as a moving gas stream to a second region[[,]] in

which a deposition zone is located proximate to said dielectric substrate and applying a charge

on said aerosol particles in said second region; , positioning said charged aerosol particles, with

essentially a zero velocity in the direction of said dielectric substrate, in a deposition zone

located in said second region proximate to said dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said dielectric substrate whereby to drive said charged particles from the aerosol

moving gas stream and deposit said charged particles as oppositely charged layers on said

dielectric substrate thus forming a built-up deposit; and

collecting or recirculating the moving gas stream in a closed system.

Claim 2 (canceled)

Claim 3 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

transporting the resulting aerosol as a moving gas stream to a second region[[,]] in

which a deposition zone is located proximate to said dielectric substrate and applying a charge

on said aerosol particles in said second region; , positioning said charged aerosol particles in a

deposition zone located in said second region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said unitary dielectric substrate whereby said charged particles are removed from

the aerosol moving gas stream and deposited as oppositely charged layers on said unitary

dielectric substrate thus forming a built-up deposit[[,]]; and

collecting or recirculating the moving gas stream in a closed system.

wherein said aerosol particles are charged.

Claim 4 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol as a moving gas stream to a second region[[,]] in

which a deposition zone is located proximate to said dielectric substrate and applying a charge

on said aerosol particles in said second region; , positioning said charged aerosol particles in a

deposition zone located in said second region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said unitary dielectric substrate whereby said charged particles are removed from

the aerosol moving gas stream and deposited as oppositely charged layers on said unitary

dielectric substrate thus forming a built-up deposit,

175 CANAL STREET MANCHESTER, NH 03101 TEL, 603,668,1400 FAX. 603.668.8567

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

> TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

wherein said aerosol particles comprise particles of dry powder; and collecting or recirculating the moving gas stream in a closed system.

Claim 5 (currently amended): A method for depositing particles onto a unitary dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>in</u>

which a deposition zone is located proximate to said dielectric substrate and applying a charge on said aerosol particles in said second region; , positioning said charged aerosol particles in a deposition zone located in said second region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first electrode positioned in said second region and a second electrode positioned underlying and in contact with said unitary dielectric substrate whereby said charged particles are removed from the aerosol moving gas stream and deposited as oppositely charged layers on said unitary dielectric substrate thus forming a built-up deposit,

wherein said aerosol particles comprise liquid droplets; and collecting or recirculating the moving gas stream in a closed system.

Claim 6 (original): The method according to claim 4, wherein said dry powder particles are triboelectrically charged.

Claim 7 (currently amended): The method according to claim 1, wherein said aerosol particles comprise liquid droplets charged by a charge injector during droplet formation.

Claim 8 (currently amended): A method for depositing particles onto a dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

transporting the resulting aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>in</u>

which a deposition zone is located proximate to said dielectric substrate and applying a charge on said aerosol particles in said second region; , positioning said charged aerosol particles in a deposition zone located in said second region proximate to said dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first electrode positioned in said second region and a second electrode positioned underlying and in contact with said dielectric substrate whereby said charged particles are removed from the aerosol moving gas stream and deposited as oppositely charged layers on said dielectric substrate thus forming a built-up deposit,

wherein said aerosol particles comprise a pharmaceutical; and collecting or recirculating the moving gas stream in a closed system.

Claim 9 (original): The method according to claim 4, wherein said dry powder particles comprise carrier particles coated with a bioactive agent.

Claims 10-13 (canceled)

Claim 14 (currently amended): A method for depositing particles onto a dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>in</u>

<u>which a deposition zone is located proximate to said dielectric substrate</u> and applying a charge on said aerosol particles in said second region; , positioning said charged aerosol particles in a deposition zone located in said second region proximate to said dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first electrode positioned in said second region and a second electrode positioned underlying and in

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

contact with said dielectric substrate whereby said charged particles are removed from the

aerosol moving gas stream and deposited as oppositely charged layers on said dielectric

substrate thus forming a built-up deposit,

wherein said alternating electric field has a magnitude between 1 kV/cm and 30 kV/cm;

and a

collecting or recirculating the moving gas stream in a closed system.

Claim 15 (previously presented): The method according to claim 14, wherein said

alternating electric field has a frequency of between 1 Hz and 100 kHz.

Claim 16 (previously presented): The method according to claim 14, wherein said

alternating field has a duty cycle different than 50%.

Claim 17 (original): The method according to claim 16, wherein said duty cycle is

90%.

Claim 18 (previously presented): The method according to claim 14, wherein said

alternating electric field is formed between a first electrode positioned at an end of said

deposition zone opposite to and facing said dielectric substrate and a second electrode in

contact with said dielectric substrate on the opposite side of where said deposit is formed.

Claim 19 (original): The method according to claim 18, wherein said first electrode is

an element of an ion emitter.

Claim 20 (original): The method according to claim 19, wherein said aerosol particles

are discharged after being deposited.

Claim 21 (original): The method according to claim 18, wherein the contact area of

said second electrode with said dielectric substrate determines the location of said deposition.

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

Claim 22 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region; transporting the resulting aerosol

as a moving gas stream to a second region[[,]] in which a deposition zone is located proximate

to said dielectric substrate and applying a charge on said aerosol particles in said second

region; , positioning said charged aerosol particles in a deposition zone located in said second

region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said unitary dielectric substrate whereby said charged particles are removed from

the aerosol moving gas stream and deposited as oppositely charged layers on said unitary

dielectric substrate thus forming a built-up deposit,

wherein substantially all of said aerosol particles are removed from said aerosol to form

said deposit; and

collecting or recirculating the moving gas stream in a closed system.

Claim 23 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region; transporting the resulting aerosol

as a moving gas stream to a second region[[,]] in which a deposition zone is located proximate

to said dielectric substrate and applying a charge on said aerosol particles in said second

region; , positioning said charged aerosol particles in a deposition zone located in said second

region proximate to said unitary dielectric substrate, and

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623

FAX. 520.882.7643

175 CANAL STREET MANCHESTER, NH 03101 TEL. 603.668.1400

FAX. 603.668.8567

Amendment I with RCE

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said unitary dielectric substrate whereby said charged particles are removed from

the aerosol moving gas stream and deposited as oppositely charged layers on said unitary

dielectric substrate thus forming a built-up deposit,

wherein the gas of said aerosol is selected from the group consisting of air, nitrogen,

and nitrogen/carbon dioxide mixtures; and

collecting or recirculating the moving gas stream in a closed system.

Claim 24 (canceled)

Claim 25 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol as a moving gas stream to a second region[[,]] in

which a deposition zone is located proximate to said dielectric substrate and applying a charge

on said aerosol particles in said second region; , positioning said charged aerosol particles in a

deposition zone located in said second region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said unitary dielectric substrate whereby said charged particles are removed from

the aerosol the moving gas stream and deposited as oppositely charged layers on said unitary

dielectric substrate thus forming a built-up deposit,

wherein said dielectric substrate comprises a packaging medium; and

collecting or recirculating the moving gas stream in a closed system.

FAX. 520.882.7643

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

> TUCSON, AZ 85701 TEL. 520.882.7623

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

Amendment I with RCE

Claim 26 (previously presented): A method according to claim 25, wherein said

packaging medium comprises a blister, tablet, capsule or tubule.

Claim 27 (original): The method according to claim 26, wherein the blister comprises

a plastic or metal foil blister package.

Claim 28 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol as a moving gas stream to a second region[[,]] in

which a deposition zone is located proximate to said dielectric substrate and applying a charge

on said aerosol particles in said second region; , positioning said charged aerosol particles in a

deposition zone located in said second region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said unitary dielectric substrate whereby said charged particles are removed from

the aerosol moving gas stream and deposited as oppositely charged layers on said unitary

dielectric substrate thus forming a built-up deposit,

wherein said unitary dielectric substrate comprises a pharmaceutical carrier; and

collecting or recirculating the moving gas stream in a closed system.

Claim 29 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol as a moving gas stream to a second region[[,]] in

which a deposition zone is located proximate to said dielectric substrate and applying a charge

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701

TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

on said aerosol particles in said second region; , positioning said charged aerosol particles in a deposition zone located in said second region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first electrode positioned in said second region and a second electrode positioned underlying and in contact with said unitary dielectric substrate whereby said charged particles are removed from the aerosol moving gas stream and deposited as oppositely charged layers on said unitary dielectric substrate thus forming a built-up deposit,

wherein said unitary dielectric substrate comprises a carrier for carrying said deposit from said deposition zone to a location remote from said deposition zone for further processing; and

collecting or recirculating the moving gas stream in a closed system.

Claim 30 (currently amended): A method for depositing particles onto a dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>in</u>

<u>which a deposition zone is located proximate to said dielectric substrate</u> and applying a charge on said aerosol particles in said second region; , positioning said charged aerosol particles in a deposition zone located in said second region proximate to said dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first electrode positioned in said second region and a second electrode positioned underlying and in contact with said dielectric substrate whereby said charged particles are removed from the aerosol moving gas stream and deposited as oppositely charged layers on said dielectric substrate thus forming a built-up deposit, wherein said dielectric substrate is edible.

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

Claim 31 (canceled)

Claim 32 (previously presented): The method according to claim 34, wherein said ion

emitter comprises a silent electric discharge device.

Claim 33 (previously presented): The method according to claim 34, wherein said

ion emitter comprises an ion radiation source.

Claim 34 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol as a moving gas stream to a second region[[,]] in

which a deposition zone is located proximate to said dielectric substrate and applying a charge

on said aerosol particles in said second region; , positioning said charged aerosol particles in a

deposition zone located in said second region proximate to said unitary dielectric substrate, and

applying an alternating electric field formed in said deposition zone between a first

electrode positioned in said second region and a second electrode positioned underlying and in

contact with said unitary dielectric substrate whereby said charged particles are removed from

the aerosol moving gas stream and deposited as oppositely charged layers on said unitary

dielectric substrate thus forming a built-up deposit,

wherein said aerosol particles are charged by an ion emitter; and

collecting or recirculating the moving gas stream in a closed system.

Claim 35 (previously presented): The method according to claim 22, wherein the

mass of said deposit is controlled by integrating the mass of said aerosol particles over time.

Claim 36 (previously presented): The method according to claim 35, where said time

is determined by the measured mass of said aerosol particles.

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

> TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

Claim 37 (previously presented): The method according to claim 22, wherein multiple deposits are made using multiple deposition zones supplied from a single aerosol source by multiplexing the application of the alternating deposition field between the

deposition zones.

Claims 38-47 (canceled)

Claim 48 (currently amended): A method for depositing particles onto a surface of a dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>in which a</u>

<u>deposition zone is located proximate to said dielectric substrate</u> with the particles of said

aerosol essentially at respective fixed distances relative to the surface of said dielectric

substrate in said second region, electrically charging said particles in said second region, and

providing an alternating electric field between an electrode underlying said dielectric substrate

and said aerosol particles in said second region whereby to drive said particles from the aerosol

gas stream and deposit said charged particles as a built-up deposit of oppositely charged layers

on the surface of said dielectric substrate opposite said underlying electrode; and

collecting or recirculating the moving gas stream in a closed system.

Claim 49 (currently amended): A method for depositing particles onto a unitary dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol <u>as a moving gas stream</u> to a second region[[,]] and applying a charge on said aerosol particles in said second region[[,]];

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

positioning said charged aerosol particles in a deposition zone located in said second

region proximate to said unitary dielectric substrate, and applying an alternating electric field

formed in said deposition zone between a first electrode positioned in said second region and a

second electrode positioned underlying and in contact with said unitary dielectric substrate

whereby said charged particles are removed from the aerosol moving gas stream and deposited

as oppositely charged layers on said unitary dielectric substrate thus forming a built-up deposit,

wherein said particles comprise a solid or a liquid; and

collecting or recirculating the moving gas stream in a closed system.

Claim 50 (canceled)

Claim 51 (previously presented): The method according to claim 49, wherein said

particles comprise carrier particles coated with a bioactive agent.

Claim 52 (currently amended): A method for depositing particles onto a surface of a

dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol as a moving gas stream to a second region[[,]] and electrically

charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said dielectric

substrate and said aerosol particles in said second region whereby said charged particles are

removed from the gas stream and deposited as a built-up deposit of oppositely charged layers

on the surface of said dielectric substrate opposite said underlying electrode, wherein said

particles comprise a pharmaceutical; and

collecting or recirculating the moving gas stream in a closed system.

TEL. 520.882.7623 FAX. 520.882.7643

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

TUCSON, AZ 85701

175 CANAL STREET
MANCHESTER, NH 03101
TEL. 603.668.1400
FAX. 603.668.8567

Amendment I with RCE

Claim 53 (currently amended): A method for depositing particles onto a surface of a dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]]

moving said aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>and</u> electrically charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said dielectric substrate and said aerosol particles in said second region whereby said charged particles are removed from the gas stream and deposited as a built-up deposit of oppositely charged layers on the surface of said dielectric substrate opposite said underlying electrode, wherein said aerosol carrier is nitrogen gas; and

collecting or recirculating the moving gas stream in a closed system.

Claim 54 (currently amended): A method for depositing particles onto a surface of a dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>and</u> electrically charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said dielectric substrate and said aerosol particles in said second region whereby said charged particles are removed from the gas stream and deposited as a built-up deposit of oppositely charged layers on the surface of said substrate opposite said underlying electrode,

wherein said dielectric substrate comprises a blister pack; and collecting or recirculating the moving gas stream in a closed system.

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

Claim 55 (currently amended): A method for depositing particles onto a surface of a

unitary dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol as a moving gas stream to a second region[[,]] and electrically

charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said unitary

dielectric substrate and said aerosol particles in said second region whereby said charged

particles are removed from the gas stream and deposited as a built-up deposit of oppositely

charged layers on the surface of said unitary dielectric substrate opposite said underlying

electrode.

wherein said unitary dielectric substrate comprises an electrically insulating material;

and

collecting or recirculating the moving gas stream in a closed system.

Claim 56 (currently amended): A method for depositing particles onto a surface of a

unitary dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol as a moving gas stream to a second region[[,]] and electrically

charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said unitary

dielectric substrate and said aerosol particles in said second region whereby said charged

particles are <u>removed from the gas stream and</u> deposited as a built-up deposit of oppositely

charged layers on the surface of said unitary dielectric substrate opposite said underlying

electrode,

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623

FAX. 520.882.7643

175 CANAL STREET MANCHESTER, NH 03101 TEL. 603.668.1400 FAX. 603.668.8567

Amendment I with RCE

wherein said unitary dielectric substrate is comprised of an electrically conducting

material; and

collecting or recirculating the moving gas stream in a closed system.

Claim 57 (currently amended): A method for depositing particles onto a surface of a

unitary dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol as a moving gas stream to a second region[[,]] and electrically

charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said unitary

dielectric substrate and said aerosol particles in said second region whereby said charged

particles are <u>removed from the gas stream and</u> deposited as a built-up deposit of oppositely

charged layers on the surface of said unitary dielectric substrate opposite said underlying

electrode,

wherein said electrically charging means employs a corona wire or corona emitting

points; and

collecting or recirculating the moving gas stream in a closed system.

Claim 58 (canceled)

Claim 59 (currently amended): A method for depositing particles onto a unitary

dielectric substrate comprising the steps of:

forming an aerosol of said particles in a first region;

transporting the resulting aerosol as a moving gas stream to a second region[[,]] and

applying a charge on said aerosol particles in said second region[[,]];

175 CANAL STREET

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

> TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

MANCHESTER, NH 03101 TEL. 603.668.1400 FAX. 603.668.8567

Docket: MICRODOSE 99.01 CON Amendment I with RCE

positioning said charged aerosol particles in a deposition zone located in said second

region proximate to said unitary dielectric substrate, and applying an alternating electric field

formed in said deposition zone between a first electrode positioned in said second region and a

second electrode positioned underlying and in contact with said unitary dielectric substrate

whereby said charged particles are removed from the aerosol moving gas stream and deposited

as oppositely charged layers on said unitary dielectric substrate thus forming a built-up deposit,

wherein said step of applying an alternating electric field is performed by:

a charge source comprising a solid dielectric member,

a first electrode in contact with one side of said solid dielectric member,

a second electrode in contact with an opposite side of said dielectric member,

with an edge surface of said second electrode disposed opposite said first electrode to define an

air region at the junction of said edge surface and said solid dielectric member, and

means a source for applying an alternating potential between said first and

second electrodes to induce ion producing electrical discharges in the air region between the

dielectric member and the edge surface of said second electrode; and

collecting or recirculating the moving gas stream in a closed system.

Claim 60 (currently amended): A method for depositing particles onto a surface of a

dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol as a moving gas stream to a second region[[,]] and electrically

charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said dielectric

substrate and said aerosol particles in said second region whereby said charged particles are

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Docket: MICRODOSE 99.01 CON

Amendment I with RCE

removed from the gas stream and deposited as a built-up deposit of oppositely charged layers on the surface of said dielectric substrate opposite said underlying electrode.

wherein said particles are electrically charging means includes charged by triboelectric charging of said aerosol particles or induction charging of said aerosol particles; and

collecting or recirculating the moving gas stream in a closed system.

Claim 61 (canceled)

Claim 62 (original): The method according to claim 48, wherein said aerosol particles are charged outside of said deposition region.

Claim 63 (currently amended): A method for depositing particles onto a surface of a unitary dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol as a moving gas stream to a second region[[,]] and electrically charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said unitary dielectric substrate and said aerosol particles in said second region whereby said particles are removed from the gas stream and deposited as a built-up deposit of oppositely charged layers on the surface of said unitary dielectric substrate opposite said underlying electrode,

wherein said aerosol particles are charged within said deposition region; and collecting or recirculating the moving gas stream in a closed system.

Claim 64 (currently amended): A method for depositing particles onto a surface of a dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Docket: MICRODOSE 99.01 CON

Amendment I with RCE

moving said aerosol as a moving gas stream to a second region[[,]] and electrically

charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said dielectric

substrate and said aerosol particles in said second region whereby said particles are removed

from the gas stream and deposited as a built-up deposit of oppositely charged layers on the

surface of said dielectric substrate opposite said underlying electrode,

wherein said electrically alternating field has a magnitude between about 1 kV/cm and

about 30 kV/cm; and

collecting or recirculating the moving gas stream in a closed system.

Claim 65 (previously presented): The method according to claim 64, wherein said

electrically alternating field has a frequency of oscillation between about 1 Hz and 100 kHz.

Claim 66 (previously presented): The method according to claim 64, wherein the duty

cycle of the alternating field is adjusted to provide maximum efficiency of said particle

deposition.

Claim 67 (currently amended): The method according to claim 64, wherein said

electrically alternating field is formed between a first electrode positioned at one side of said

deposition region opposite and facing said unitary dielectric substrate and a second electrode

contiguous to said unitary dielectric substrate.

Claim 68 (canceled)

Claim 69 (currently amended): A method for depositing particles onto a surface of a

dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

175 CANAL STREET

ANCHESTER, NH 0310

HAYES SOLOWAY P.C. 130 W. CUSHING STREET

> TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

MANCHESTER, NH 03101 TEL. 603.668.1400 FAX. 603.668.8567

Amendment I with RCE

moving said aerosol <u>as a moving gas steam</u> to a second region[[,]] <u>and</u> electrically charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said dielectric substrate and said aerosol particles in said second region whereby said particles are removed from the gas stream and deposited as a built-up deposit of oppositely charged layers on the surface of said dielectric substrate opposite said underlying electrode,

wherein the pattern of deposited material is defined by an electrically conducting mask disposed adjacent said charging means; and

collecting or recirculating the moving gas stream in a closed system.

Claim 70 (currently amended): A method for depositing particles onto a surface of a dielectric substrate that comprises comprising the steps of:

forming an aerosol of said particles in a first region[[,]];

moving said aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>and</u> electrically charging said particles in said second region[[,]];

providing an alternating electric field between an electrode underlying said dielectric substrate and said aerosol particles in said second region whereby said particles are removed from the gas stream and deposited as a built-up deposit of oppositely charged layers on the surface of said dielectric substrate opposite said underlying electrode,

wherein the aerosol particle mass flow is monitored whereby the mass of deposited particles is controlled; and

collecting or recirculating the moving gas stream in a closed system.

Claim 71 (currently amended): A method for depositing particles onto a surface of a dielectric substrate that comprises comprising the steps of:

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Docket: MICRODOSE 99.01 CON
Amendment I with RCE

forming an aerosol of said particles in a first region[[,]];

moving said aerosol <u>as a moving gas stream</u> to a second region[[,]] <u>and</u> electrically charging said particles in said second region[[, and]];

providing an alternating electric field between an electrode underlying said dielectric substrate and said aerosol particles in said second region whereby said particles are removed from the gas stream and deposited as a built-up deposit of oppositely charged layers on the surface of said dielectric substrate opposite said underlying electrode,

wherein multiple deposits are made using multiple deposition regions supplied from a single aerosol source by multiplexing the application of the alternating deposition field between the deposition regions; and

collecting or recirculating the moving gas stream in a closed system.

Claims 72-73 (canceled)

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643

Amendment I with RCE

AMENDMENTS TO THE DRAWINGS:

The attached two sheets of drawings include amendments to FIGS. 6 and 7. These sheets, which contain FIGS. 5 and 6, and 7, replace the original sheets containing FIGS. 5 and 6, and 7. Annotated marked copies of amended FIGS. 6 and 7 also are enclosed for the Examiner's convenience.

HAYES SOLOWAY P.C. 130 W. CUSHING STREET TUCSON, AZ 85701 TEL. 520.882.7623 FAX. 520.882.7643